A NEW SPECIES OF THE GENUS COLLETES FROM THE COLORADO DESERT OF CALIFORNIA

(Hymenoptera:Apoidea)

P. H. TIMBERLAKE

Citrus Experiment Station, University of California, Riverside

A fine new species of *Colletes* was collected near Hopkins Well, about 18 miles west of Blythe, Riverside County, California, April 28–29, 1952, where one female was taken by Paul D. Hurd, Jr., and one male by J. G. Rozen. In 1958 the locality was revisited and many specimens of this bee were collected at flowers of *Larrea* and at the nesting site during the period of April 13 to 18 by J. A. Powell, P. D. Hurd, J. W. MacSwain, E. G. Linsley and the author. Subsequently Dr. Hurd discovered five specimens in the California Insect Survey collection which had been taken with *Martinapis* at flowers of *Cercidium* on April 22, 1950, near Indio by E. G. Linsley and J. W. MacSwain.

Colletes stepheni Timberlake, new species

This new species is remarkable for its large size, morphological characters and its habits. The male runs in Stephen's table (1954, Univ. Kans. Sci. Bull., 36:174–201) to *prosopidis*, but differs from that species and the related *algarobiae* and *deserticola* in its much larger size and by having the first joint of the flagellum more than twice as long as the pedicel, the ocelli very large, the pubescence of the head and thorax unusually dense and the clypeus much more prominent. The female runs to *salicicola* but differs in its large size, prominent clypeus, large ocelli and by having a well-defined and finely rugose pygidial plate.

It is a pleasure to name this very distinct species of the *daleae* group in honor of W. P. Stephen, who has given us an excellent revision of the North American species of the genus *Colletes*.

Male.—Black, the apex of tergite 7 reddened and the apical segment of venter mainly ferruginous. Apex of all tibiae reddened and the tarsi ferruginous. Flagellum of antennae ferruginous in large part, but the first joint entirely dark and the following four or five joints becoming successively less blackened on the upper side only. Apex of mandibles reddened. Tegulae amber color. Wings faintly smoky hyaline, the nervures testaceous brown, the subcosta black.

Head broad, the eyes strongly diverging above. Ocelli somewhat greater in diameter than the thickness of antennal scapes. Clypeus prominent, strongly elevated and rather abruptly declivous on each side and at base. Labrum bulbously convex at base. Malar space as long as wide. Antennae long, the first joint of flagellum twice as long as the pedicel and somewhat

shorter than the second joint, which with following joints is twice as long as thick. Spines of prothorax obsolete. Face densely and minutely punctured, the punctures becoming sparse and faint on exposed parts of vertex. Clypeus polished, medially sulcate and moderately closely and finely punctured. Thorax minutely and closely punctured, the punctures of the mesopleura somewhat coarser and closer than those of mesoscutum. Basal area of propodeum entirely smooth and shining, or sometimes with fine oblique rugae on each side of the base. Abdomen dullish, with dense microscopic setigerous punctures. Tergite 7 narrowed to the rounded apex, nude and finely rugose on disk. Pubescence long, dense, plumose and white on head and thorax, but clypeus nearly nude, although partially covered by the long pendant hairs from sides of face and supraclypeal region; hair of thorax above tinged with ochreous. Abdomen with dense white hair bands at apex of tergites 1 to 5, the hair on tergite 6 and sides of tergite 7 comparatively thin; hair on disk of tergite 1 long, thin and white, but somewhat denser on the lateral margins; hair on disk of tergites 2 to 5 fine, depressed, mostly very short, but becoming longer and more erect on tergites 4 to 6. Seventh ventral plates subquadrate, moderately widened and truncate at apex, each with a slight fold on the middle of the apical margin; outer apical corner of each plate rounded, with moderately long dense hair, and the commisural margin with fine short hair. Parameral appendage of stipites small, about one and one-half times longer than wide and rounded at apex; volsellae massive; lateral wings of sagittae testaceous, moderately wide and widest at their middle; dorsal wings absent. Length, 9.5–13 mm.; anterior wing, 7–8.5 mm.

Female.—Black, the pygidial plate rufescent, and the apical ventrite more or less and irregularly reddened; apical margin of the ventral segments 2 to 5 narrowly whitish hyaline. Apical two-thirds of mandibles and middle of labrum tinged with dark red. Legs black, the small joints of tarsi ferruginous, the claws piceous in apical half, and the tibial spurs testaceous. Antennae black from base of scape to the second or third joint of flagellum, thence becoming more ferruginous above toward apex, and ferruginous beneath from apex nearly to base of second joint of flagellum. Tegulae amber color. Wings faintly dusky hyaline, becoming more definitely dusky in apical field; nervures and stigma testaceous brown, the nervures except the black subcosta more ferruginous toward base of wing.

Head broader than long, with eyes strongly divergent above. Ocelli large, distincly greater in diameter than greatest thickness of antennal scapes, the posterior pair less than one-half of their diameter from occipital margin of vertex. Facial fovea obscured by pubescence, but broad and rounded at posterior end. Malar space about one half as long as wide. Clypeus strongly elevated, prominent and with a medium sulcus. Mandibles obtuse at apex, the inner tooth represented by the oblique narrowing of the inner margin. Prothorax without spines. Basal area of propodeum smooth, the basal pits weakly developed or more or less obsolete in middle. Tergite 6 with a distinct pygidial plate with converging sides and rounded apex, the disk finely rugose with some of the rugae irregularly longitudinal. Tarsal claws with a strong inner tooth. Antennae rather elongate, the flagellum cylindrical, with the middle joints nearly twice longer than thick,

the first joint longer than the second and more than twice as long as the pedicel. Pubescence dense, plumose and white, becoming ochreous on dorsum of thorax and tinged with ochreous in ocellar region of vertex. Hairs in the pits on apical margin of clypeus, and those fringing the mandibles and sides of tergite 6 golden ferruginous, and hair on inner side of tarsi bright ferruginous. Tergites 1 to 5 each with a broad white apical band, the disk of tergites with very fine and short depressed hair, not concealing the surface, except at base of tergite 2; base and sides of tergite 1 with long, rather thin white hair. Venter of abdomen with moderately short and dense hair which becomes denser at apex of segments and fringes the margin to form weak bands. Clypeus finely punctured, the punctures somewhat lengthened, moderately close on disk and sparse on the declivous sides. Face above clyeus and the thorax very finely and closely punctured, the puntures of mesoscutum about one to two puncture widths apart. Disk of first tergite before the band with extremely fine and moderately close punctures and exposed part of disk of following tergites with dense microscope punctures. Length, 13–15 mm.; anterior wing, 9–9.5 mm.

Holotype male and allotype female, 18 MILES WEST OF BLYTHE (HOPKINS WELL), RIVERSIDE COUNTY, CALIFORNIA, on *Larrea*, April 15, 1958 (Timberlake). Paratypes as follows: 5 females, Indio, Riverside County, on *Cercidium floridum*, April 22, 1950 (E. G. Linsley and J. W. MacSwain); 1 female, 1 male, 18 miles west of Blythe, the female on *Geraea canescens*, April 28, 1952, the male, April 29 (Hurd and Rozen); and 141 males, 102 females, 18 miles west of Blythe, April 13–18, on *Larrea divaricata*, except 110 males, some females taken at nesting site, some males asleep at night on dead grass stems (*Hilaria rigida*), and 1 pair taken at light (Timberlake, Powell, Hurd, MacSwain and Linsley).

BOOK NOTICE

FISHING WITH NATURAL INSECTS. An Angler's Guide to Useful and Interesting Information about Many Common Insects and a Few Imitation Lures that Fishermen use for Bait. By Alvah Peterson. x+176 pp., 63 figs., most of them compound. Columbus, Ohio. For sale by the author, Entomology Division, Ohio State University, Columbus 10, Ohio. 1956. Price $6.00.

The subtitle is a fair description of the text. It is essentially a how-to-do-it book for anglers, who will read a good deal of entomology while searching for the particular bit they want. The factual information is accurate, but by simplifying for non-technical readers Dr. Peterson has made some generalizations which will bother the critical entomologist. The drawings are nearly all good. The photographic illustrations vary from excellent to very poor; many of them have been so heavily retouched that they no longer resemble photographs. The book could have been shortened and the text improved by stricter editing. — HUGH B. LEECH, *California Academy of Sciences, San Francisco.*